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| 10/624,139 | 07/21/2003 | Ezra J. Rapoport | 14501-003001 | 5553 |
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| EXAMINER VO, HUYEN X | | | | |
| ART UNIT 2626 | | PAPER NUMBER | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/624,139

Applicant(s)

RAPOPORT, EZRA J.

Examiner

HUYEN X. VO

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

3. Claims 1-11 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101" – publicly available at USPTO.GOV, "memorandum to examining corps"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example, the steps of determining a first primary peak and determining a second primary peak are not "tied to" any particular apparatus or machine. These steps are considered mental steps that can easily be performed by a human being. Specifically, a person looks at a speech waveform on a computer screen

and picks a number of high peaks in the waveform. From these peaks, the person can determine the pitch period by measuring the distance between peaks.

Information Disclosure Statement

4. The information disclosure statement filed 4/16/2004 and 4/27/2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the cited references are not relevant to the claimed invention. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 9, 11-15, 20, 22-26, 21, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Ireton et al. (USPN 6026357).

7. Regarding claim 1, Ireton et al. disclose a method of determining a pitch period, comprising:

determining a first primary peak of an input signal (*col. 13, lines 14-60*); and
determining a second primary peak of the input signal by locating a maximum peak from a series of peaks centered a period of time, equal to a prior pitch period, from the first primary peak (*col. 13, lines 14-60*).

8. Regarding claim 12, Ireton et al. disclose an article comprising a machine-readable medium that stores executable instructions for determining a pitch period, the instructions causing a machine to:

determine a first primary peak of an input signal (*col. 13, lines 14-60*); and
determine a second primary peak of the input signal by locating a maximum peak from a series of peaks centered a period of time, equal to a prior pitch period, after the first primary peak (*col. 13, lines 14-60*).

9. Regarding claim 23, Ireton et al. disclose an apparatus comprising:

a memory that stores executable instructions for determining a pitch period (*referring to figure 6*); and

a processor (*referring to figure 6*) that executes the instructions to:

determine a first primary peak of an input signal (*col. 13, lines 14-60*); and

determine a second primary peak of the input signal by locating a maximum peak from a series of peaks centered a period of time, equal to a prior pitch period, after the first primary peak (*col. 13, lines 14-60*).

10. Regarding claims 2-4, 13-15, and 24-26, Ireton et al. further disclose wherein the input signal is a quasi-periodic waveform (*voice input in figure 6; quasi-periodic is an inherent characteristic of the voice signal*), wherein the quasi-periodic signal is a speech waveform (*voice input in figure 6*), wherein the series of peaks comprises six peaks (*col. 13, lines 43-54; peaks often occur at multiple of fundamental time delay*).

11. Regarding claims 9, 11, 20, 22, 31, and 33, Ireton et al. further disclose the method of claim 1, further comprising: designating the second primary peak as a first primary peak of a second pitch period subsequent to the pitch period (*col. 13, lines 14-60*), and generating a vector of each pitch period (*col. 3, lines 52-60*).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 10, 21, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ireton et al. (USPN 6026357) in view of Nohara et al. (USPN 5204906).

14. Regarding claims 10, 21, and 32, Ireton et al. fail to specifically disclose the method of claim 1 wherein the prior pitch period length is determined from taking a cepstrum of waveforms prior to the pitch period. However, Nohara et al. teach that the prior pitch period length is determined from taking a cepstrum of waveforms prior to the pitch period (*referring to figure 2*).

Since Ireton et al. and Nohara et al. are analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Ireton et al. by incorporating the teaching of Nohara et al. in order to improve pitch detection accuracy.

15. Claims 5-8, 16-19, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ireton et al. (USPN 6026357).

16. Regarding claims 5-8, 16-19, and 27-30, Ireton et al. fail to specifically disclose the method of claim 1, further comprising: setting a buffer length, setting a vector length, wherein the buffer length comprises 20 sample points at 8 kHz in a speech signal, and wherein the vector length comprises 120 sample points at 8 kHz in a speech signal. However, it would have been obvious to one ordinary skill in the art at the time of

invention to readily realize that buffer length, vector length, and sample sizes are well-known setup in signal processing steps. The specific vector length and sample size can easily be adapted dependent upon a particular application. The advantage of this is to improve signal quality for intended application.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN X. VO whose telephone number is (571)272-7631. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/624,139

Page 8

Art Unit: 2626

Primary Examiner, Art Unit 2626
